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RUFUS PORTER, EDITOR.

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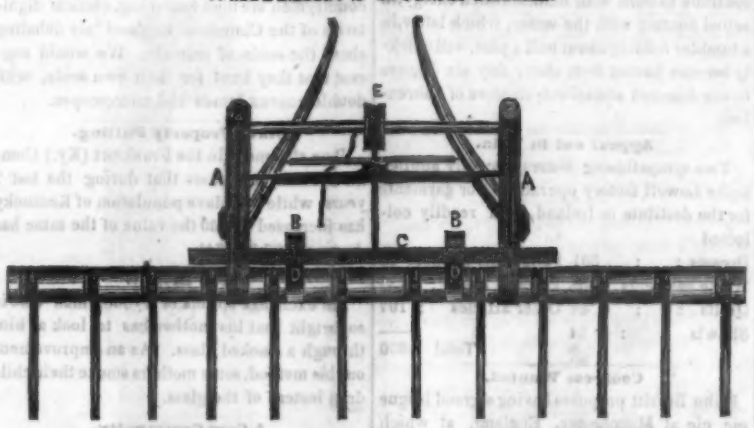
☞ See Advertisement on last page.

POETRY.

A LAY FOR THE MASS.

No longer, no longer delay you,
Too low, yet too low is your state,
Let anger nor apathy stay you
In delusion; oh! no longer wait.
"That a good day is coming" in, smiling,
And wait awhile longer is sung;
Oh! trust not to words so beguiling,
Away—let such caution be flung.
A work of benificence calls you,
A work to be peacefully wrought.
To dispel the dark cloud that enthrals you,
To unlock the deep treasures of thought.
Together build factory and college,
In countries, domains set apart,
And free as the waters, let knowledge
Flow kindly to each human heart.
When gardens with fruit richly cluster,
When harvests in golden waves smile,
The young in their strength proudly muster
And teach and innure them to toil.
Let the mind in wisdom be moulded,
And the hand be taught with the mind;
Man's powers will but be unfolded,
When science with labor is joined.
Bring the plough, the hoe, and the harrow,
Bring the axe, the saw and the wedge;
Use the team, the cart and the harrow,
Use the fire, the anvil and sledge,
The loom, the piano sweet sounding—
Use water power—conquering stream,
Use the book with science abounding,
And the acts held in highest esteem.
Away with deceiving half measures,
And notice no limited plan,
But boundless as nature's vast treasures,
Be the aims and industry of man.
To you who are delving and sweating,
And you who are slaves of the mill,
Your carelessness only is letting,
You can make better times if you will.
By virtue and rectitude guided,
Demanding instruction and light—
For justice be firm and decided,
As freemen, contend for the right.
The seeds of all knowldge broad casting,
The harvest for you may not spring,
But your sons, to them 'twill a lasting,
A priceless inheritance bring.
Come forward ye men of all classes,
Each one that can cast a free vote,
Oh! use it to raise up the masses,
Industry and learning promote;
The great work of progress be pressing,
'Till all shall in wisdom be taught,
'Till labor's acknowledged a blessing,
A good to be valued and sought;
Commence the great work; it is rightful,
The strong holds of prejudice storm,
Make the pathway of knowledge delightful,
Man's social condition reform.
While strength lies in ignorance dreaming,
And suffering want hides ashamed,
The earth with rich treasure is teeming,
That lieth unused, unreclaimed.
It is good and free hearted kindness,
Hath oft proved an angel to grief,
Yet poverty's curse most is blindness,
And knowledge its surest relief.
Oh! take the young mind as 'tis lighted,
Young strength as from childhood 'tis free'd
Develope both powers—and delighted,
Man then, will be noble indeed.

WHITMAN'S HORSE-RAKE.



We notice this as a new invention, though it has been tested by actual service, sufficiently to prove its superior excellence, and gain the approbation of many who have witnessed its performance. In this engraving is represented a view of the rake from the rear. The teeth, of which there should be twenty instead of twelve as represented, are made of 3-8 steel wire, and curved forward at the bottom; and being coiled twice round the horizontal shaft, have a great degree of elasticity. The standards A A to which the thills are attached, are connected to the shaft by a metallic strap, but allowing the shaft to occasionally revolve. The heads of the standards support a pair of handles which extend back a foot or more; the ends only of these handles appear in the engraving. Two segments D D are attached to the shaft, and upon the curved tops of these, rests a moveable check-bar C which is governed in its position by two small vertical rods which descend from the handles, pass through the bar, and thence horizontally to the standards; and the horizontal check-bar has liberty to slide up or down on the vertical rods. From the centre of the check-bar, a cord passes up over the pulley E (which is mounted on a round cross-bar which extends from one standard to the other) and the opposite end of this cord may be held by the person who rides the horse, or by one who follows. In the top of the segments and immediately behind the check-bar, are two projecting pins (as seen immediately over D) which ordinarily holds the segments and shaft from turning; but whenever the check-bar is raised by means of the cord, the machine being in motion forward, the shaft immediately revolves, rolling over upon the periphery of the segment, thus discharging whatever hay or straw the teeth may have collected, and comes into its original position. Thus one person may guide the horse and manage the rake at the same time. Mr. L. M. Whitman of Ridgefield, Ct., is the patentee, and the invention should come into extensive and general use. A small model may be seen at this office.

Canine and Feline Fishers.

The Centreville Times relates a story of a dog, apparently of the water species, who was as eagerly intent on catching fish as the most enthusiastic follower of old Izaak Walton could possibly be. The stream was low, and the dog stood in the centre, and as the fish came down, as quick as thought his nose was down and up come a "sunny," which he carried soberly ashore, much to the delight of two little negro children who were anxiously watching his proceedings.

This story is matched by the Westmoreland (Eng.) Gazette, which says that Mr. Dickenson, miller, Witherslack, has a cat in his possession which may be seen daily traversing the river side in search of fish. Grimalkin has been often known to watch patiently for half a day until the fish appears in some shallow part of the water, and, after continuing motionless until the finny prey is within reach, she uses her *appropriation claws* with such expertness as almost invariably to seize the fish. Puss has been known to take as many as as half a dozen trout in the course of the day, which she carefully carries home to her young.

The Schoolmaster Wanted.

The following *Phonographic* epistle is from a *Merchant* near Cleveland. "April 5, 1847. Mr. —— ——, Der Ser—I sent you a letter a few days since ago to send me some Printing paper But You Needent to sand Me any no, Becose the office Has Give up a Goin, And so You don't needent to send me non. Respectfull Yours Signed &c." There are good schools in Ohio.

Apportionment of Time.

Sir Edward Coke says:
Six hours to sleep—to laws' grave study six;
Four spend in prayer—the rest on nature fix.
Or as Sir Wm. Jones says:
Six hours to law—to soothing slumber seven;
Ten to the world allot—and all to Heaven.

Humility.

Pride consists in thinking of ourselves more highly than we ought to think. Its opposite, humility, does not imply a lack of self-respect, but that this feeling is not inordinate; so that one places a *just* estimate upon himself. We said humility implies no lack of self-respect. Some mistake on this point. With them meekness is a species of meanness, denoting a cringing, slavish spirit. In their view, to be humble, one must think of himself *less* highly than he ought to think. This is an abuse. There are many reasons why we should have a proper regard to ourselves, our rights and interests. Without it we cannot well discharge the duties devolving on us in our various responsible trusts.

A Mother School.

A young lady advertises to form a class of young mothers and nurses, and to instruct them in the art of talking to infants in such a manner as will interest and please them. She flatters herself that her peculiar tact and great experience in this most important branch of household duties, will enable her to give entire satisfaction.

Sage Remarks.

Some preachers, says the Olive Branch, cry down worldly things, because they wish to obtain them, and cry up spiritual things because they wish to dispose of them.

The following from the same paper, might apply nearer home: "Count not your chickens before they are hatched, says the old proverb. Is it not as great an error to believe there are no chickens in eggs till you see them hatched."

A person being asked what was meant by the "realities of life," answered—real estate, real money, and a real good dinner, none of which could be realised without real hard work.

LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 8th, 1847.

To John Pagin, of Buffalo, New York, for improvement in apparatus for discharging Grain, &c. from vessels. Patented May 8, 1847.

To Adolph F. Ahrens, of Philadelphia, Pa., for improvement in Ball Castors. Patented May 8, 1847.

To Philetus W. Gates, of Chicago, Illinois, for improvement in Dies for Cutting Screws. Patented May 8, 1847.

To Robert W. Thomson, of England, for improvement in Carriage Wheels. Patented May 8, 1847.

Ao Ashael Aldrich, of Douglass, Mass., for improvement in Syphons for elevating water, &c. Patented May 8, 1847.

To Ira Avery, of Tunkhannock, Pa., for improvement in Wringing Machines. Patented May 8, 1847.

To John S. Royce, of Leicester, New York, for improvement in Carriages. Patented May 8, 1847. Ante-dated Feb. 5, 1846.

To Ebenezer Cate, of Boston, Mass., for improvement in Window Blinds. Patented May 8, 1847.

To Warren Mansfield, of South Braintree, Mass. and H. L. Thistle, of Washington, D. C., for improvement in Linch Pins and Washers. Patented May 8, 1847.

To Samuel E. Hartwell, of New York, and Wm. M. Fowler & De Grasse Fowler, of Waterbury, Conn., for improvement in machinery for making Cigars. Patented May 8, 1847.

DESIGNS.

To Charles W. Warwick and Frederick Lebrandt, of Philadelphia, Pa., for design of frame for Ovens. Patented May 8, 1847.

RE-ISSUE.

To James Wilson, of New York, for improvement in Cooking Stoves. Date of Letters Patent May 16, 1846. Re-issued May 8, 1847.

An Eccentric Character.

The Rev. Mr. Hagemore of Calthorpe, Eng., died on the 1st of January, 1746, possessed of a very comfortable fortune. He kept one servant of each sex, whom he locked up every night. His last employment before retiring, was to go round his premises, let loose his dog and fire his gun. He lost his life in a very singular manner. Going one morning to let out his servants, the dogs fawned upon him suddenly, and threw him into a pond, which was breast high. The servants heard him call out for assistance, but, being locked up, they could not render him any. He had 30 gowns and cassocks, 58 dogs, 100 pairs of breeches, 100 pairs of boots, 400 pairs of shoes, 80 wigs, yet never wore one, 80 wagons and carts, 80 ploughs, and used none, 50 saddles and furniture for the menage, 30 wheel-barrows, a great number of canes, 60 horses, 300 pickaxes, 200 spades and shovels, 75 ladders, and 240 razors.

A Wren's Nest in a Jacket Pocket.

Within the premises of Clackmannan Distillery, in a house occupied as a smith shop, when the distillery was in operation, some time ago, the watchman hung up his jacket. A few days afterwards he had occasion to remove his jacket, when to his astonishment he observed a wren make her escape from some part of it. The circumstance induced him to examine it more attentively, when he was both delighted and surprised to find a neatly built a little nest into which a man's thumb could scarcely enter. The watchman carefully replaced his jacket, she again resumed her labor, and when the writer of this examined it, she had amassed property to the amount of ten little beautiful eggs.—*English Paper.*

Haller says that a single house fly will produce in one season 20,080,210 flies!

The Recent Illumination.

To our readers in this city, any thing on this subject may appear insipid; but not so with those more distant, many of whom may not have heard of our grand celebration, which is admitted to have been the most splendid scene ever witnessed in this city. The military parade, though extensive and splendid, did not constitute the most interesting display of the occasion The day was serene and pleasant, and in the evening, Broadway and other principal streets presented continuous lines of flames. Commencing with Castle Garden, it extended in one unbroken sheet to the New York Hotel, embracing among the most conspicuous buildings the City Hotel, New England House, Rathbun's Hotel, Howard's Hotel, the Franklin House, the Astor, American Hotel, City Hall, Gallery of Fine Arts, Stewart's Palace Bazaar, with hundreds of private dwellings deviced with transparencies, fire works and lights of every description. The Theatres, the American Museum, and other places of amusement, were all brilliantly illuminated. Lovejoy's Hotel, Tammany Hall, and indeed the whole block in which Tammany Hall stands, was radiant with light. The Newspaper offices, without exception, joined in the fete. Transparancies, banners and fire works hovered over them like a mottled blaze of glory. The illumination ran into every nook and corner of the city, and many private houses displayed a magnificence that on an ordinary occasion would have excited general applause. The City Hall and Sun Buildings stand credited with making of themselves the grandest displays of the night. The Sun Buildings were in a perfect blaze, nearly one half the front on Fulton street being made up of windows, while rockets darted from its roof into the sky raining fire of a thousand hues. The united rays from fifty thousand candles dispelled the darkness of night in the Park, while hundreds of gay rockets and other fireworks were displayed from the City Hall, Museum, Astor House, Tammany and several other buildings in the immediate vicinity.—The Park and all the streets adjoining and leading thereto, were densely crowded with admiring multitudes, numbering at least 100,000 people. At 10 o'clock the lights were extinguished and the people quietly retired.

American Phrenological Journal.

We have received and examined the April and May numbers of this instructive and interesting work, and find them particularly interesting on account of the more ready illustration of the noble science of phrenology, by various true and very striking portraits. This work is published in monthly numbers of 34 pages each, for the low price of one dollar per annum, by Fowler & Wells, No. 131 Nassau street.

Deferred Articles.

Several articles, answers to correspondents, and notices of Newspapers and new publications, prepared for our last paper were much to our regret, excluded for want of room; and when we discovered that this was likely to be the case, we wrote a brief apologetical notice thereof, but subsequently discovered that *that* also was crowded out. If this notice of these circumstances should not find favor with the types, our readers will not know that any other unfortunate circumstance than negligence on the part of the Editor or Printer prevented the earlier appearance of said notices.

Cruelty and Cowardice.

In an order issued just before the battle of Buena Vista, Gen. Taylor remarked that "*men who cowardly put to death unoffending Mexicans are not those who will sustain the honor of our arms in the day of trial.*"—True to the letter, when the battle begun to rage, the same Arkansas Cavalry, who had been complained of for murdering and abusing the peaceable inhabitants, were the first to fly from the field.

Snow was three feet deep on Mount Holly, Vt., April 22d.

Heat of the Flame of Oxyhydrous Gas.

On projecting the flame issuing from the compound blow-pipe, against the outside of a small tinned iron cup, full of cold water, the outside of the cup will become red hot, and at length assume a white heat, not only on its outside, but within, in contact with the water; and in an instant afterwards the flame will break through the side of the cup, and enter the water without being extinguished.—The jet pipe and flame are plunged under water; with due precautions, the flame will continue to burn with undiminished energy, in actual contact with the water, which latter, in a tumbler holding about half a pint, will quickly become heated from about fifty six degrees to one hundred and seventy degrees of Fahrenheit.

Appeal not in Vain.

Two sympathising sisters recently applied to the Lowell factory operatives, for garments for the destitute in Ireland, and readily collected

Dresses : :	301	Pairs boots & shoes	48
White garments	368	Pairs of hose :	138
Quilts : :	44	Other articles :	107
Shawls : :	24		
		Total	1030

Cook-ess Wanted.

Elihu Burritt proposes having a grand league pic nic at Manchester, England, at which the table is to be furnished entirely with American articles of food; and says—"We intend to look up some American women who is *au fait* at buckwheat cakes, "corn-doings and apple-fixings," baked beans, pumpkin pies, &c.

The Favorite Name.

It is reported that a ship owner at Bangor has three vessels nearly completed; they are to be named "Zachary Taylor," "Gen. Taylor," and "Rough and Ready." This reminds us of Uncle John—who having three children (two of whom was daughters) named them all Johns,—Polly-John, Nalby-John and Little-John.

The Boston Machinists.

Several meetings have been held on the subject of the 'ten hour system.' The results we have not learned; but hope they will not forget to encourage the improvement of the other five or six hours per day, in some better manner than lounging, smoking and going to theatres.

You Catch 'em, We Kill 'em.

The Missourian Civil Authorities are exempt from the trouble of executions, or even of judicial trials of culprits. They have only to arrest an accused criminal, put him in jail, and the populace assemble, break open the prison, take the offender and string him up.—A case of this kind has recently occurred in Franklin County.

Wooden Bread!

Professor Autenrieth, a German, has made an improvement on Franklin's famous sawdust pudding. He gives a recipe for producing palatable and wholesome bread from birch chips, twice ground and baked The Professor is evidently not more than "half baked," and tries to make up the lack in his invention.

Mutual Satisfaction.

A pair of bucks have been found near Baton Rouge, La, with their horns locked together. In the fierceness of their encounter the horns had sprung together and defied all the efforts of the noble animals to separate them. The probability is, that in exhaustion they lay down thus helplessly united, and pined away life in starvation.

A Tunnel.

It is proposed to tunnel the St. Lawrence, opposite the island of Montreal, in order to connect the railroad running to the Atlantic. The proposed tunnel under the St. Lawrence at its narrowest part, near St. Helen's Island, will be about one-third of a mile from shore to shore, and about one-third the length of the principal tunnels in England. The depth of the water in the river is 43 feet.

National Courtesy.

The French Government brig Vigilent, Capt. Fabre, which arrived at Boston on Sunday last, was despatched by the authorities of St. Pierre, for the purpose of bringing up the master and crew of the American brig Argo of Baltimore, wrecked at sea.

The Pittsburg Editors.

Mr. Delany, editor of the "Mystery," was recently fined $150 for publishing one Johnson as a slave catcher, notwithstanding that the charge was admitted to be true. But the whole editorial corps of the city immediately united in a petition for his pardon, with which the Governor readily complied: and the expenses of the suit were defrayed by voluntary contributions.

Poverty and Polemics.

At the very moment when millions of their countrymen are nigh famishing, clerical dignitaries of the Church of England are debating about the souls of animals. We would suggest that they hunt for their own souls, with double convex lenses and microscopes.

Slave Property Falling.

By a statement in the Frankfort (Ky.) Commonwealth, it appears that during the last 7 years, while the slave population of Kentucky has increased 16,000 the value of the same has decreased $7,305,741.

Too Bright.

An exchange speaks of a young man who is so bright that his mother has to look at him through a smoked glass. As an improvement on this method, some mothers smoke their children instead of the glass.

A Cow Community.

It is said that the principal names in Waldoboro' Me., are Head, Horn, Hide, Hoof, Sides, Shank, Blood, and (in place of tail) Onberhind.

Tinning Cast Iron.

Some person recommends as an improvement in this art, that the iron to be tinned should be steeped or washed in a solution of muriate of zinc;—then sprinkled with muriate of ammonia and dipped in the melted tin.

Natural Compass.

In the vast prairies of Texas, a little plant is always to be found, which under every circumstance of climate or change of weather, invariably turns its leaves and flowers to the North.

Singular Casualty.

A young lady was recently killed in Cincinnati by being dragged out of the carriage in which she was riding, by having the border of her dress caught by a splinter in one of the wheels

New Invention Reports.

In all our various exchange papers, which purport to be mechanical or scientific, we have not found within the past week, so much as one new invention reported.

A freight and passenger train over the Hudson and Berkshire Railroad, fell through a bridge on Monday the 3rd inst. at East Chatham. The engine and three freight cars went down and were all smashed to pieces.

The arrests in this city for different crimes within the last six months, have been about 10,000. 18,741 persons have been permitted to sleep in the station houses; 741 lost children have been restored to their parents.

A volunteer at Vera Cruz writes that being posted near the walls during the bombardment, he could distinctly hear the screams of women and children as the shells fell in the city.

During the recent Missionary Convention at New Haven, a gang of pickpockets appeared among the throng, dressed as clergymen, in black coats and white cravats.

18,000,000 feet of lumber is expected to be delivered at Elmira, N. Y. between the opening and closing of navigation.

The Maysville, Ky., Eagle says, that the amount of hemp purchased in that market during the present year, will exceed 6,500 tons.

At Syracuse, sixty carpenters are at work building canal boats. Twelve of the largest boats will be launched immediately.

The little paper called the "American Eagle," published at Vera Cruz, is less than half the size of this paper, and sells at 12 cents a copy.

The number of deaths from starvation in Ireland, is estimated at upwards of fifty thousand

FROM MEXICO.

During the illumination and other festivals in commemoration of the recent successes of the American arms in Mexico, announcement was made by telegraph that another great victory had been gained by the forces under Gen. Scott. This was generally discredited at first, but has been subsequently fully confirmed; and this victory appears to have been the most important if not the most brilliant that has been achieved by the American arms since the commencement of the war. We shall not give the details, but merely say that Santa Anna having selected the most favorable position in the most difficult pass between Vera Cruz and Mexico, about twenty miles beyond the National Bridge, and industriously fortified his position, and arranged his army of 14,000 men and a large number of cannon, he was boldly assailed and defeated by 7,000 Americans under Generals Worth and Twiggs. The Americans clambered up the mountain sides, and charged up the steep ascents to the cannon's mouths, captured 4000 prisoners including several generals, among whom was our old acquaintance Gen. La Vega. Santa Anna escaped in a hurry on one of his mules, leaving his coach with $18,000 in specie, his dinner and wooden leg, (the only part of him that would'nt run.) Gen. Twiggs pursued the flying Mexicans for several miles, till they all dispersed so that there appeared none to pursue; and whether they will make another stand short of Mexico, remains to be learned.

Further and Further from Mexico.

In some of our exchanges we find articles week after week, under the caption of "Further from Mexico." Their news will eventually get a great way off from Mexico at this rate.

It is remarked that Santa Anna, by running away and leaving his hot dinner, gave an opportunity for Gen. Scott to take another "hasty plate of soup."

In clearing off ground at Logansport, Indiana, lately, marks of a hatchet were found in a tree, which from counting the growths would seem to have been made about 309 years ago.

The Chambly and Longueril Plank Road Company have declared a dividend of $6,000 as the earnings of the road for the last year. It is ten miles long and cost $16,000.

Corning, Horner & Co. of Albany, are putting up an extensive steam rolling mill just below their nail works. It is calculated to be in operation about the latter end of August.

A large eagle measuring 5 feet feet 5 inches across the wings, was shot last week near the red mills opposite Albany. It was shot through the wing while flying.

The preacher well known as "Father Taylor," and who so persevereingly defended the free masons, is now preaching the beauty and excellence of Odd Fellowship.

Major Noah says that "a house without children, is like a forest without birds, a river without sailing craft, or a church without a congregation."

One John Davis who died in England in 1778 left the sum of five shillings to his widow, to enable her to get drunk at his expense—for the last time!

English walnuts are very productive in some parts of this country—near New York is a tree which is said to have produced in one year a crop selling for $200.

Four millions of dollars in gold have been or are about to be coined at the Philadelphia Mint, from English sovereigns.

The wind wagon recently constructed at Independence, Mo., has been put in operation, and sailed at a speed of 15 miles per hour.

Several spots are visible on the sun's disk, some of which are computed to occupy 40,000 square miles.

The stocks of all the railroads running from Boston are at or above par.

SAY NO.

BY D. C. COLESWORTHY.

When tempted to wander from duty and truth,
By the syren of pleasure, in the freedom of youth,—
Have courage to answer the soft smiling foe,
And when you are tempted say earnestly, no!

When the glass that is sparkling is pressed to the lip,
And cheerful companions invite you to sip,
Beware of the serpent beneath the rich glow,
And dash the bright wine cup, with a hearty no, no!

The gamester may teach you, with his deep burning wiles,
With words that are pleasant and face full of smiles,
In sport he may ask you the dice-box to throw,
Be firm in your virtue—Indignant say, no!

The way that is infamous, which multitudes throng!
With music and dancing and soul-melting song;
'Tis Beauty that beckons and asks you to go;
Away from false splendor,—say heartily, no!

With looks that are smiling and words that are fair,
Wherever the tempter may meet you, beware?
Like an angel of mercy all sweetness and bloom
Enticing the thoughtless, the syren may come.

O, ponder your footsteps, leap not in the dark;
Upon the wild ocean launch not your frail bark
Without the true wisdom that God will bestow;
When beckoned by error, say earnestly, no!

Take, take the good Bible for your guide and your chart, [heart,
And bind its pure precepts close, close to thy
O, then with the profligate you never will go,
But ever when tempted, say heartily NO!

Taylor on the Battle Field.

Lieut. Corwin, writing an account of the battle, says of Gen. Taylor. "He took his position on a commanding height overlooking the two armies. The enemy, who had succeeded in gaining an advantageous position, made a fierce charge upon our column, and fought with a desperation that seemed for a time to insure success to their arms. And when he saw the enemy give way and retreat in the utmost confusion, he gave free vent to his pent up feelings. His right leg was quickly disengaged from the pummel of the saddle, where it had remained during the whole of the fierce encounter—his arms, which were calmly folded over his breast, relaxed their hold—his feet fairly danced in the stirrips, and his whole body was in motion. It was a moment of the most exciting and intense interest. His face was suffused with tears. The day was won—the victory complete—his little army saved from the disgrace of a defeat, and he could not refrain from weeping for joy at what seemed to so many, but a moment before, as an impossible result.

A Village for Sale.

To show the effects of the great emigration to America, the entire village of Meimbresson in the Electorate of Cassel, is offered for sale, as all the inhabitants, 600, are about to leave for the United States

Captured Cannon.

We have captured from Mexico since the commencement of the war, 8 pieces of cannon at Resaca, 20 at Matamoras, 50 at Monterey, 400 at Vera Cruz, 50 at Alvarado, and 8 at Cerro Gordo; at Tuspan (probably) 20—about 560 pieces.

Interesting Coincidence.

Three male infants were baptised in a Presbyterian church at Rochester last week. Their mothers were sisters, the efficiating minister was their brother and there were twenty of the same family present on the occasion.

A Fool's Heart is in his Pen.

The man who stole $84 from Miss Fairfield and afterwards promised by letter to return it with interest, when he got ready, has been discovered and arrested, through the handwriting of his epistle.

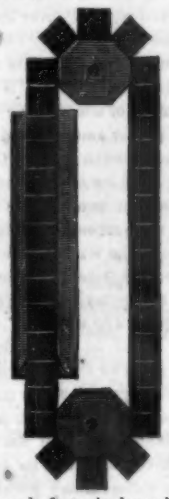
A Strange Animal.

According to Louisville papers, a wonderful animal has been caught at the Rocky Mountains, about the size of a horse, and covered with short fine wool. It is a regular *boulder* in the animal kingdom, and the only one ever seen.

LOUDON, N. H., APRIL 3, 1847.

Mr. Editor:—

I beg leave to address you as an old acquaintance, feeling as such, having read your paper, the "Scientific American," since vol. 1, No. 49, with much pleasure and satisfaction, and will add, with great interest. I notice that you give correspondents every indulgence, and all the information they ask respecting new inventions, I therefore make bold to ask your opinion concerning power gained by the buoyancy of water, with a machine which I will describe thus:



Suppose two shafts to be hung horizontally, one as low as circumstances will admit; the other some 20 feet directly over it, more or less, having on each a drum made eight square or more; we will have the squares each one foot; then add a band made of boxes one foot square every way, and connect them together by means of stout hinges, a sufficient number to reach around both of these drums; then place a cistern so that one part of this band of boxes will pass through it. Let this cistern stand upright, and have it as tall as it will stand between the two drums, with a hole in the bottom barely sufficient to let this train of boxes pass through, the top open. Now we will place some flaps of leather around this hole and nail them to the bottom of the cistern, and let them lay up against the boxes as they pass upward; these flaps are to limit the escape of water at the bottom when the cistern is full. Now these boxes being air tight, will not the water raise them and set the drums in motion? Please give me your opinion and oblige,

Yours, &c. HENRY H. AYER.

ANSWER.—We had investigated your problem some years ago. The grand difficulty which you will have to encounter,—which you have overlooked and which spoils the invention,—is the resistance of water against the boxes while they are passing up into the cistern. Whatever may be the height of the cistern or the depth of the water, the resistance of water at the entrance of each box will be just equal to the entire force of buoyancy during the ascent of the box through the water. To be more explicit, the entire column of water is necessarily elevated a certain distance by the entrance of each box: what constitutes the buoyancy of the box, is the gravity of the water which is accommodated in the descent of the water in proportion to the elevation of the box; and when the box has reached the surface, the same quantity of water will have thereby descended the same distance which it was raised by the box in the first instance.—ED.

A Traitor.

It is said that an American who was well known in Santa Fe, fought hard against the Americans, and with his very good rifle killed most of those who fell dead. When the fortress was taken, he endeavored to make his escape, but fell with thirty odd balls through him. One hundred must have been fired upon him simultaneously.

In 1800, a year of great scarcity an act was passed prohibiting bakers from offering their bread for sale until twenty-four hours after it was baked.

The Star Spangled Banner, of Boston, recently published a tale written by a Miss thirteen years of age.

THE WEATHER, &c.

WEDNESDAY, MAY 5th.

	Hours, A. M.									Hours, P. M.									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Therm.	44	47	53	58½	59	59½	62	63	64	65	66	70½	63½	60½	58½	54	52½	51½	50
Wires,	51	54	59	66	66	65½	67	68	69	70	71	65	69	66½	64	59	58	56½	55
THURSDAY, 6th.																			
Therm.	45	46	52	59	62½	65	66½	71½	67½	69	68	66	62	58½	54	52	52	51	50
Wires,	51	52	58	66	69½	70	71½	67	72½	74	72	70½	66½	63	58½	57	56	55½	54
FRIDAY, 7th.																			
Therm.	45	49	53	57	60	61	65½	65	65½	67	68	65½	63½	60½	58	58	—	—	—
Wires,	51	55	59	62½	66	66	68	69½	70	71	71	70	67½	65	62	62	—	—	—
SATURDAY, May 8th.																			
Therm.	52	52	53½	55	56	57½	58½	61	62	64	65½	65	64½	64	62	58	56	54½	54½
Wires,	56	56	56	57½	58	60½	61½	64	65½	67	67½	68	68	68	66	61	59	58	57½
SUNDAY, 9th.																			
Therm.	52	53	54	56	58	64	66½	65	64	66	66	—	64	63	62	69	57½	56	—
Wires,	54	55	57	59	60	67	69½	68	67	68	67½	—	67	66½	64	62	60½	57½	—
MONDAY, 10th.																			
Therm	52	51½	53½	57	60	61½	66	69	69	73	72½	72	68	65	63	60	59	59½	—
Wires,	54	53	55	58½	62	64	68	71	72	75	74	74	70	67	65	62	61	61½	—
TUESDAY, 11th.																			
Therm.	54	54	55	56	57½	59½	63	66	69½	72	71½	69½	68	67	66	64	65	63	61½
Wires,	55	55	56	57	59	60½	64	67	71	74	73½	72	70½	69	68	66	63	65	64

[*Approximation*.

REMARKS.

The wires have been but partially equilibriated during the week ending with Tuesday, May 12, but the wires and thermometer have been gradually approximating and this morning, at 5 o'clock, marked the temperature with a variance of but one degree Yesterday morning the variance was two degrees—both mornings had a clouded atmosphere with much fog. The large black bugs made their appearance yesterday morning in great numbers, and again this morning. Rain fell at 2 P. M. Saturday, May 8. Thursday, May 6, the smoke hanging over the city became a cloud and was of a redish hue. Monday, May 3, I noted an equilibration in my last week's memorandum of long duration. In the Brooklyn Star of that day I noted the state of the wires of that day and of the two previous days and that a two fold disturbance was indicated. Accounts have since reached us of a snow storm at Bangor, Maine, on the 3d, and snow in Otsego County on the 2d, and rains South on the first and second. When time elapses for further accounts, I have no doubt that we shall have accounts of a lightning storm on Saturday or Sunday, which originated in a terrestrial disturbance. A correspondent writes me from the banks of the Au Sable, May 5, that the snow was quite deep in the woods in that vicinity, the Au Sable heads among the Adirondack Mountains west of Lake Champlain.

E MERIAM.

Brooklyn Heights, May 11, 1847.

Wealth of the River Amazon, South America.

We some time since noticed the fact, that a celebrated English nautical and mining engineer had been exploring the country up the Amazon and made some valuable discoveries as to the existence of extensive deposits of the precious metals, auriferious sand in the streams, and many botanical specimens quite unknown in this country. A company was formed in the United States to endeavor to reap the advantages of these discoveries; and the French sent out an expedition two or three years since, which has, however, turned out unsuccessful, as another is now forming to go out in the Astrolabe corvette and Alecton steamer, of eighty horse power. The Academy of Science, under the direction of M. Arago, have given all the necessary instruction to the officers; and these vessels will leave, early in the spring, for the Brazils From the discoveries which have been made it is presumed that a communication exists between the Amazon and the Pacific, or, at least, a very slight interruption. The result is looked forward to with great interest by scientific men, as there appears to be no doubt entertained of the existence of large quantities of mineral wealth. The Anglo-American Company are already prosecuting their researches, and have several narrow boats, drawing but little water, some of which are worked by steam, far up the river. From these exertions it is not to much to expect that we shall soon be in possession of some most interesting information of the mineral and other natural resources, the inhabitants, zoology, botany, &c., of this interesting but little known portion of the globe.

Cotton.

Georgia Sea Island cotton is of a dull butter tint, the filament being some three times longer than that of the India cotton wool. The fibres are cylindrico spiral, and hence the ease with which they are spun into cotton thread.

Georgia Upland cotton is good for coarse yarns. The staple is short, light and feeble. It was called for a long time "Bowed cotton," from the fact that it was separated from the seed by the blows of a bow-string.

Tennessee cotton is of nearly the same quality as the Georgia Upland, except that it is cleaner and the staple a little longer.

New Orleans cotton is superior to the last two named kinds, and may be said to occupy a middle point between Sea Island and Georgia Upland.

Pernambuco cotton has a fine long staple, clean and uniform, and yarns made from it are in great request among the stocking weavers]

Demerara, Berenice and Maranham cottons are fine and glossy, and well cleaned. They are spun into a fair stout yarn.

Bahia cotton is better than either of the two kinds last named.

Surinam cotton has a long staple, and is faintly tinged with yellow. It is clean, and much sought after by hoosiers.

West India cotton is from Bourbon seed—the staple is fine and silky, but not well prepared.

Barbadoes cotton has a short staple, but is silky and strong. It appears in the market with much husk.

More Flies.

The *Dumfries Herald* says, that on Monday forenoon, about ten o'clock, a shower of flies, which darkened the air as they descended, fell on the Annan road, about half a mile to the east of Dumfries, and covered the road for 600 or 700 yards, and the road was black with the crawling flies.

The Jewish women of Frankfort-on-the-Maine have formed an association for the education of poor Jewish girls, and the senate has granted them the privilege of buying landed property, which has been hitherto exclusively possessed by the Christians.

It is reported that the plantation of Gen. Taylor, has been damaged to the amount of $20,000 in consequence of a breach in the levee, opened by some miscreant about two miles above.

The improvement which Mr. John R. St. John has made in the magnetic needle is said to render it a more certain indicator of approaching changes of weather than the barometer.

The two Armies of Scott and Taylor, it is said, will celebrate the declaration of American Independence in Mexico, on the 4th of July next.

The Pacha of Damascus has issued a proclamation enjoining the women to go closely veiled, and threatening to cut off their noses! if they disobey his orders.

The manufacturers of Lowell have resolved to allow operatives three-quarters of an hour for breakfast as well as dinner, after the first of May.

The directors of the lunatic asylums, in Vienna, are trying the effect of music, singing and dancing upon their patients.

NEW INVENTIONS.

Improved Vertical Water Wheel.

Of the numerous recent improvements, or at least, variations and modifications of water wheels, nineteen-twentieths of them have been on horizontal motions, while the vertical motion,—which is in most general use,—has been comparatively overlooked. But we have recently examined the plan of a vertical wheel invented by Mr. W. C. Burbank, of Flatbush, N. Y., which appears likely to supersede to a great extent, both the overshot and breast wheel for heavy water powers. The plan is decidedly novel and will evidently give more power by five or ten per cent, than the overshot. We had thought of procuring an engraving, but that not being immediately convenient, we shall attempt a brief description without it. This may be called the vertical drum-wheel, the periphery being close and without any appearance of buckets. It has a second close drum periphery within the first, from 10 to 20 inches distant, according to the quantity of water to be used. Between these two peripheries are arranged a series of buckets, constructed in the form of a V, with the angle in the centre. The space between the buckets is open at the sides of the wheel, and the water is supplied and discharged through these open spaces on both sides. Of course, whatever momentum there may be in the feeding current, is exerted on the wheel, and the water cannot escape till it reaches the lowest point of the circle, and then leaves the wheel freely, and without resistance.

New Spark Arrester.

We find in an exchange, a brief notice of an invention in this line, by a mechanic of this city—name not given. Its principal peculiarity consists in the arrangement of pipes which conduct the smoke through a horizontal chamber containing a quantity of water, into which all the sparks and cinders are deposited, insomuch that a white cambric handkerchief was not soiled by being held over the top of the smoke-pipe. The trial was made with both coal and pine wood fuel. We wish the inventor ample success, though he may be aware that the use of a water chamber for catching the sparks has been projected and rejected some years since. But we see no good reason why the plan may not succeed.

A Curious Safety Lock.

We seldom meet with a more novel and quaint invention, than that of a new bank and safe lock invented by Mr. J. Y. Savage, of this city. The lock itself is very simple, having a stout bolt attached to the inside of the door, and which is projected forward by a spring whenever the door is closed, and without the least possible communication with anything outside, no aperture nor even an indication of the situation of the lock. But a simple clock movement is attached to the door inside, and so arranged as to be adjusted to let off a spring at any required hour and minute, on the principle of the common alarm clock; and this spring, when thus liberated, withdraws the bolt inside. But neither the burglar nor the lawful proprietor can possibly obtain access to the interior till the faithful sentinel inside gives the word.

Telegraph Improvements.

It is reported that Col. W. H. Cleveland, of Baltimore, has discovered an improved method of insulating telegraph wires in a manner suitable for crossing creeks and rivers. A young gentleman of Newark, has discovered a method far superior to any hitherto introduced, for extending the communication across rivers, &c., independently of the wires. We are not at liberty to describe the principles of his discovery at present.

French Sash-Fastener.

We have been shown a new, permanent and elegant fastening for fashionable French windows, and which is certain to supersede other kinds in use. It is the invention of Mr. J. Haggart of this city, and consists of a vertical iron rod which is attached to the centreward bar of one of the sashes, extending the length of the sash, embedded therein so as to be concealed from view, and terminating in a clasp or catch at each end which takes to a staple fixed in the window frame. To the middle of this rod is attached an ornamental handle with a revolving catch which is fitted to a socket in the other sash, and firmly takes thereto. Mr. Haggart has taken measures for securing a patent, and the articles will be furnished by the firm of Tappen & Haggart, 57½ Bowery

New-Fashioned Railroad.

M. Audrand, an individual well known in Paris for his unremitting exertions, for the last seven years, to perfect a system of railroad travelling by means of *compressed* air, seems at length in a fair way to succeed. He has laid down a way 100 yards long, upon which a carriage, built for the purpose, is impelled, upon his new principle, with an ease and smoothness heretofore not attained on the ordinary railroads. There is no locomotive necessary to move it, inasmuch as this is accomplished through a tube laid in the centre of the road, with a pipe by its side, which keeps up the motive power. This system, the inventor undertakes to show, is vastly preferable, in all respects, to that of the atmospheric. It combines all of its advantages, while it is subject to none of its imperfections. It unites entire safety with the capacity to run 15 to 50 miles per hour. The cost of keeping it in motion is stated to be less than one-half of that of engine propelled carriages. We can place but little confidence in the invention, however, without having some definite description of its peculiarities of construction.

Important Invention.

We visited, on Saturday of last week, says the Cincinnati Gazette, the sheet iron shop of Mr. John Cline, near the junction of Front and Columbia, and found the proprietor engaged in the construction of an ingenious contrivance for drying corn prior to grinding. It is doubtless known to most of our readers, that, in exporting meal to Europe, it becomes musty and useless, unless the corn has, previous to grinding, undergone some drying process. Heretofore, although money and time have been employed, no better method has been adopted than the common malt kiln. Some other contrivances, however, than the one we speak of, have been resorted to, but none, we believe, so rapid in the process of drying as to be of sufficient utility. The one Mr. C. is constructing will doubtless meet this difficulty, as it is capable of drying about 5,000 bushels a day. The credit of the invention, we are informed, is due to our fellow-citizen, Mr. L. Fagin, who, we understand, has already received at his mills orders from Europe for meal sufficient to justify the expense necessary to the construction of the corn dryer alluded to, the cost of which will be about $1,500. We believe Mr. F. has made no application for a patent; but the invention will be of great utility in advancing the already rapidly increasing provision trade between this country and Europe; and we think the inventor should derive all possible benefit from the result of his ingenuity and labor. Mr. Cline has exhibited both skill and energy in the construction of this work, and will shortly have it ready for use, when it will be worth the walk to see it in operation. We shall probably give a description hereafter of the construction of the corn dryer, and its manner of operating.

Embossing Picture-Frames

A Mr. Bielefield of London has put in operation, and secured by letters patent, a machine for ornamenting picture frames and which is expected to supersede the slow method of carving and ornamenting by the old process The principle is new, as applied to manufactures of this kind; it is simply to pass any length of frame under a roller in which is cut the desired pattern. This roller, the radius of which is cut but a few inches, is turned out of a new cast of gun metal, and is driven by a steam engine. The wood which is passed under it is necessarily soft, say the best pine, and receives at any length the impress of the most delicate tracery which can be engraved on the metal. The advantages of this are sufficiently apparent; but there are yet others which may be mentioned. The wood comes from the machinery ready for gilding, or complete as an imitation of ebony or Florentine bronze, and also in colors, and having preserved on the surface the design in all its sharpness, which would be deteriorated by the ordinary method of whitening and sizing.

The Economic Gas Burner.

A burner under this name has just been invented, which the patentees (Messrs. Paul & Co.) affirm obviates the defects peculiar to all ordinary burners, principally in the adoption of an apparatus which secures a more perfect combustion, and consequently a brighter and more homogeneous light, besides greatly economising the consumption of gas. It is thus described in the printed prospectus:—"A solid conical button is inserted into the inner air channel, at a certain height from the top of the burner, which arrests and restricts the supply of air, and at the same time causes it to be diffused equally and regularly over the inner surface of the flame; and the outer current is adjusted by means of a conical glass chimney.—By this combination the flame is placed between two streams of atmospheric air, nicely regulated to a proper amount, and distributed in the direction most favorable to complete combustion. This burner contains but one row of jet holes, not two or three rows, as is the case with some recently constructed burners, which shows the want of scientific principles in their arrangement; for how is it possible that the atmospheric air can get into the centre of the gas? The merits of this invention are to be found in the production of a burner which gives no shadow, consequently rendering profitably available as much of the light as is possible. The combustion being perfect there is no deposite of soot, therefore no filthy black ceilings, and no smell. And in proof of the extraordinary pureness of the light it may be mentioned that shades and tints of colors may be distinguished as perfectly as by day—an effect hitherto in vain desired."—Whether all this is really the case we have no means of knowing, but the burner that has been submitted to us for inspection unquestionably shows a large surface of white flame, from which light of an extremely pure and intense character is emitted.—*Eng. paper.*

The Fortunes of Inventors.

(*Continued from No.* 33.)

After eleven years of suffering and poverty I got in a situation to demand my rights, but alas, I had to run all the risk and bear all the unpopularity of mean patents in shape of the prejudices of the community. I found the boasted right of trial by jury of no advantage to any body, but a patent right man, most of the infringements were in the western and southern states, where a man can hardly collect a common debt, especially if he is a "Yankee." So I found it best to get the little I could scare out of them and let them go,—men who had made fortunes out of my very improvement would not pay me a cent. However it was not so with all; I got of some $100, of some $50. They all allowed that they got from one quart to one quart and a pint of oil from each bushel, more than with the old kind; in fact it made an entire revolution in the oil making business a new era. I am of opinion that in my case, as Whitney said in his, its very value was what operated against him; had it been of only one quarter of the value, fewer would have gone into it, but they would have paid up. Now then, I have an improvement to make on the Hydraulic Oil Press, a very great one. I presume you are familiar with the Hydraulic Press, its force pump, its safety valve, and that at the end of each operation the water has to be drawn out of the main cylinder to let the pistons draw back into the cylinder, so that the tubs or article pressed can be removed and replaced by another. Then the force pump is again put in operation, and the cylinder filled, and the pressure obtained, the force pump being generally worked by steam or water, and it keeps going until the safety valve raises, when it is stopped by a person keeping watch, and who stops the force pump until the oil has a chance to start out, when the force pump is again set in motion by the person attending it. Now there are several things that are complained of by operators, 1st, the length of time it takes to start the pressure again, as the pistons are drawn back enough to leave some space which has got to be filled as the pistons are driven out, and then again the seed has to be compressed to a certain degree before the oil starts; all this takes time, and that is very valuable where the quantity of seed worked per day is the profits more or less. 2nd, the Hydraulic Press, unlike most other presses has no elasticity, i. e. when the pump stops, the press stands and will not follow up as the seed gives way or the oil departs, which is a grievious fault, as the pump must either be kept constantly going and the safety valve constantly upon the wear, or have a person to watch it all the time.

(*To be continued.*)

Supremacy of the Human Animal.

The fear which all wild animals in America have of man is very singularly seen in the Pampas. I often rode, says Sir F. Head, in his 'Journey across the Pampas,' towards ostriches and gamas crouching under the opposite side of my horse's neck; but I always found, that, although they would allow any loose horse to approach them, they, even when young, ran from me, though little of my figure was visible; and, when one saw them enjoy themselves in such full liberty, it was, at first, not pleasing to observe, that one's appearance was everywhere a signal to them that they should fly from their enemy. Yet it is by this fear that man hath dominion over the beasts of the field; and there is no animal in South America that does not acknowledge this instinctive feeling. As a singular proof of the above, and of the difference between the wild beasts of America and of the Old World, I will venture to relate a circumstance which a man sincerely assured me had happened to him in South America. He was trying to shoot some wild ducks, and in order to approach them unperceived he put the corner of his poncho (which is a sort of long, narrow blanket) over his head, and, crawling along the ground upon his hands and knees, the poncho not only covered his body, but trailed along the ground behind him. As he was thus creeping by a large bush of reeds, he heard a loud, sudden noise, between a bark and a roar; he felt something heavy strike his feet; and, instantly jumping up, he saw, to his astonishment, a large lion actually standing on his poncho; and perhaps the animal was equally astonished to find himself in the immediate presence of so athletic a man. The man told me he was unwilling to fire, as his gun was loaded with very small shot and he, therefore, remained motionless, the lion standing on his poncho for many seconds. At last the creature turned his head, and, walking very slowly away about ten yards, he stopped and turned again. The man still maintained his ground, upon which the lion acutely acknowledged his supremacy and walked off.

Light Artillery.

This very efficient arm of defence, with its modern improvements, was unknown in the U. S. Service previous to Mr Van Buren's administration, when, under the direction of Mr. Poinsett, then Secretary of War, four companies were organized and fully equipped. Only a few years have elapsed since that time, but enough is known of the importance of the Flying Artillery to warrant the belief that one company is capable of doing as much execution in an engagement, as can be accomplished by one regiment of Infantry. The battles of Palo Alto and Resaca de la Palma called into practical use this new and powerful destructive, and established its character beyond the shadow of a doubt. The necessity of an increase of light artillery having thus become apparent to all interested in the improvement of our military establishment, Gen. R. Jones, Adjutant General of the Army, invited the attention of the Secretary of War to the subject, and soon after had the gratification of seeing his views embodied in an Act which passed at the late session of Congress. This act provides for the equipment of four additional corps of Light Artillery, making eight in all; and also provides for the temporary detachment of these companies from their respective regiments under certain circumstances. When so detached they are to be organized into two separate battallions, each of four companies: and these may be subdivided into demi battallions, as the service may require, with appropriate field commanders, selected for their experience and ability in the field. This force, in the aggregate, can present a battery consisting of two battallions of forty-eight pieces, to wit:—thirty-two 6 pounders, and sixteen 12 pounders howitzers, and be susceptible of division and subdivision into batteries of twenty-four, twelve, and six guns respectively.

NEW YORK, MAY 8, 1847.

Ancient Astronomical Knowledge.

The honor of arranging the observed facts into something like order and, consequently, the invention of the science of astronomy, is attributed by different writers to various nations —namely, the Chaldeans, the Egyptians, the Chinese, and the Indians. Beneath the fine climate and in the level plains of Chaldea the spectacle of the heavens, everywhere so striking, must have forcibly arrested the attention of a people just emerging from a state of barbarism; and the habit of observation was, perhaps, increased by the addiction of their sages to judicial astrology, and to endeavor to discover the imagined relations between the stars and human destinies. From the plains of Chaldea this habit of observing astronomical changes made its way to the valley of the Nile,and hence the Egyptians soon became well versed therein. The Chaldean and Egyptian records furnished materials from which the motions of the sun and moon could be calculated with sufficient exactness for the prediction of eclipses; and some remarkable cycles or periods of years, in which the lunar eclipses return in very nearly the same order, had been ascertained by observation. But when we remember, that, in order to account for eclipses,these people supposed that the great luminaries were on fire on one side only, and that the temporary presentation of their darkened side towards the earth was the cause of the phenomenon, we can scarcely allow that they possessed any really scientific pretensions. Nor was this the only theory on the matter. Another, equally absurd, was believed, to the effect, that the sun and moon was carried round the heavens in chariots, closed on all sides, with the exception of one round hole, the occasional closing of which was productive of the eclipse. We might cite many other theories equally ridiculous, all of which tend to show that their whole knowledge of astronomy was confined to a few plain and simple phenomena, the result of observation alone. Nor can we,indeed, wonder at this, for, considering the extreme imperfection of their means of measuring time and space, this was, perhaps, as much as could have been expected at that early period.

Iron in Alabama.

We learn from the Tuscaloosa Monitor,that a bloomery will soon be established near that city, for the manufacture of hollow ware and other descriptions of iron castings. In Bibb, Shelby and Talladega counties bloomeries and forges have been in operation for some time; in the two former for a number of years—and the results so far are highly encouraging. The Monitor states that beds of the finest ore are found to an incalculable extent in Tuscaloosa county, and it is ascertained to be superior to any in the South or West. An iron master of Tennessee, who compared it with his own, gives it the preference both for quantity and quality.

Bristle Dressing at Cincinnati.

This business is carried on very extensively at three different establishments—and gives occupation to more than one hundred hands, whose labors it engages during a part of the year, affording higher wages, or rather netting to the laborer more profits than almost any other journeyman employment in Cincinnati.—These bristles are sent to our eastern cities, where they are assorted for various uses. The market value there of one season's supply is thirty-five thousand dollars.

Enterprising.

Millbury, a little town in Massachusetts, manufactured last year to the amount of $1,-000,000. It has 6 cotton mills, 4 woolen mills, 2 paper mills, 3 machine shops for making cotton and other machinery; 2 iron foundries, 1 sash and blind factory, 1 scythe establishment, 1 factory for making bevels, hoes, trowels, hay cutters, &c.; 1 for making railroad cars, 1 for black lead, 1 for tanning leather,besides many small shops.

Origin of Negro Slavery.

Mr. Bancroft, in the first volume of his history of the United States, gives an account of the early traffic of the Europeans in slaves.—In the middle ages the Venetians purchased white men and Christians, and others, and sold them to the Saracens in Sicily and Spain. In England, the Anglo-Saxon nobility sold their servants to foreigners. The Portuguese first imported negro slaves from Western Africa into Europe in 1442. Spain soon engaged in the traffic, and negro slaves abounded in some places in the kingdom. After America was discovered, the Indians of Hispaniola were imported into Spain and made slaves. The Spaniards visited the coast of North America, and kidnapped thousands of the Indians whom they transported into slavery in Europe and the West Indies.

Columbus himself enslaved 500 native Americans, and sent them into Spain, that they might be publicly sold at Seville. The practice of selling North American Indians into foreign bondage continued for nearly two centuries. Negro slavery was first introduced into America by Spanish slaveholders, who emigrated with their negroes. A royal edict of Spain authorized negro slavery in America in 1603. King Ferdinand himself sent from Seville 50 slaves to labor in the mines. In 1511, the direct traffic in slaves between Africa and Hispaniola was enjoined by a royal ordinance. Las Casas, who had seen the Indians vanish away like dew before the cruelties of the Spaniards, suggested the expedient that the negroes who alone could endure severe toils, might be still further employed. This was in 1518.—The mistaken benevolence of Las Casas extended the slave trade which had been previously established.

Sir John Hawkins was the first Englishman that engaged in the slave trade. In 1625 he transported a large cargo of Africans to Hispaniola In 1567 another expedition was prepared, and Queen Elizabeth protected & shared in the traffic. Hawkins in one of his expeditions, set fire to an African city, and out of 8000 inhabitants succeeded in seizing 260.—James Smith, of Boston, and Thomas Keyser, first brought upon the colonies the guilt of participating in the African slave trade. In 1545 they imported a cargo of negroes from Africa.

Throughout Massachusetts the cry of justice was raised against them as malefactors and murderers: the guilty men were committed for the offence, and the representatives of the people ordered the negroes to be restored to their native country at the public charge. At the latter period there were both Indian and negro slaves in Massachusetts. In 1620 a Dutch ship entered James River, and landed twenty negroes for sale. This is the epoch of the introduction of negro slavery in Virginia For many years the Dutch were principally concerned in the slave trade in the market of Virginia

Mahogany.

Dr Gibbons, an eminent physician in the latter end of the 17th century, had a brother a sea captain, who was the first that brought from the West Indies some mahogany logs to London for ballast. The doctor was then building him a house in Covent Garden, and his brother the captain thought they might be of service to him, but the carpenters found the wood too hard for their tools,and it was laid aside as useless. Soon after Mrs. Gibbons wanted a candlebox and got a cabinet maker to make it out of the useless wood laying in the garden. The box was made, and the Doctor was so pleased with it, that he got the cabinet maker to make him a bureau of it, and the fine color and polish of it induced him to invite a great number of friends to see it, and among them the Duchess of Buckingham. Her grace begged the doctor for some of the wood and got Wollaston the cabinet maker, to make her a bureau also, on which the fame of mahogany and Wollaston were much raised and it became the rage for grand furniture. No other wood excels it yet.

Zinc Statues.

Some of the French artizans have adopted the plan of casting statues and groups of figures, in zinc instead of bronze. By this means the cost of such models is very much reduced, while an equally good representation is produced.

Eastern Manufactures.

The town of Adams, Mass., is famous, at least, for the number of its factories and other manufacturing establishments. There are 15 cotton mills, running about 22,000 spindles, and there is cotton cloth made for printing, to the amount of 4,100,000 yards yearly, about half a million of which is made by Mr. Marshall alone; 1000 pieces weekly. There are two calico print works at North Adams, one prints about 36,000 yards per week, or 1,872,-000 per annum. Some beautiful new patterns at the Union Works, the goods of Mr. Marshall, are all done by the cylinder press.—These patterns are a royal blue ground, with ruby and amber filling, the amber chasing the pattern like a vine, the ground work appearing like a combination of St. Andrew and George's crosses. There is one unchangable law in the proportioning of the different colors in calicoes and ginghams, viz., the relative parts of yellow, red and blue. In stripes, the mathematical proportions ought to be as to three of yellow, five of red, and eight of blue. The combination of these three colors from all the different shades. Nature is the best guide in these things—the rainbow in the blending of stripes—the flowers of the field in other patterns Shawl, (woolen) patterns used to be altogether different from the cotton, being mostly derived from chinese characters, square jottings of vines and leaves. A perverted taste long admired them as beautiful, from the brilliancy of coloring, as the ungraceful, deformed shapes of fashion's devotees are admired at the present time, but the graceful curve, and the *bounding line of beauty*, is too well known to good designers of patterns now, to be infringed as a law of beauty, unless for the purpose of suiting a vitiated fashionable taste, and then it must be done, and we are sorry to say, it is so too often. The other print work in North Adams, has capacities for finishing double that of the goods of the Union print works, but it is silent as the Halls of Tara, for some time past. The value of cotton goods manufactured annually, was in 1845, $364,024, but a new factory was erected in South Adams last year, and the increase in value in one year, cannot be far from $20,000 more, making the annual value of 1846 about $385,000. In the woolen mills, there are no less than 354,000 lbs. of wool consumed annually, in the three factories. There are more than 20,000 yards of cashmere made, some very beautiful at Mr. Blackington's Centreville factory. There are 386,000 yards satinett made, 200,000 Kentucky jeans, and the annual value of the woolen business, is about $300,000 per annum. The other manufactures are numerous, but insignificant in comparison with those already mentioned. One however is new in this place, viz., that of iron, where a bed of good ore has lately been discovered in the north village,and promises yet to be a profitable business, and would indeed be so, was a more economical method of roasting the ore adopted. There are some marble quarries, and some *serpentine* lately discovered is unrivalled for beauty. There is not however above $10,000 worth quarried per annum. In the south village there is a beautiful new stove factory fitting up by Messrs. Pollock & Hatheway, the enterprising manufacturers of cotton (satinett) warps, who mostly supply the factory on the Patroon's creek. You may judge of what a cotton warp is, when I tell you, that for one web, the warp is a single thread of 1,080,000 yards, or 613 7-11 miles, this is for 1800 warps. In their new factory, they will soon be making threads to *span the world*. There are 200 males in the cotton factories, and 380 females. In the woolen factories, there are 94 males and 83 females. For an inland town, Adams exhibits a wonderful manufacturing energy, and rivals many other manufacturing towns,which have much greater advantages of natural facilities.

The Beauties of Capital Punishment.

A sheriff, or rather hangman recently hung a man "according to law" at Morpeth, England, but by some mistake in measuring, the rope was so long that the feet of the victim came to the ground. The rope was immediately hauled up by violent jerks and made fast, but as the man continued struggling, the hangman got hold of his feet and pulled and tugged till he finally got the man dead.

Newspaper Notices.

The Norway Advertiser.—We seldom see a more interesting and well managed weekly journal, than this "away down east" paper, which is published by E. Plummer, Esq., in the "back woods" of Maine. We observe it has been recently enlarged and improved, and we would recommend it to any of our readers who would like a real specimen of an eastern paper.

Portland Transcript.—This popular favorite is too well known to require a 'recommend' from us. But the circumstance is worthy of notice, that it has not only adopted an elegant picturesque ornamental head, but has been changed from the quarto form to the plain folio. There are some advantages in this form, with regard to convenience of the first reading, though the quarto is preferred for binding and preservation. The Transcript is published by S. H. Colesworty, Portland, Me.

The Christian Citizen.—We have seen but a few numbers of this paper, and regret that we had not enjoyed an earlier acquaintance with it. It is published at Worcester, Mass., by Elihu Burrett, (the "learned blacksmith") and is very properly termed "one of the best" papers in the country. Its title, though very appropriate in itself, is decidedly detrimental to its popularity, as it too readily conveys an idea of a *religious sectarian* paper, which class of papers, at the present day, has fallen far below the standard of the good common sense of the people. The "Citizen" abounds in the most interesting intelligence, and demonstrations of rational sentiments.

Reformation of Language.

We have received from the ingenious Author, Lewis Masqueriere Esq., a copy of a new ortographic, pronouncing and defining dictionary of the English language. In this work, Mr. M. has introduced a new set of characters for letters, purporting to be based on a perfect analysis of orthographic sounds, together with various other improvements. We wish him much success in this effort at reform, though it is evident, that different people have such different views of the true elements of language, that no system can be produced that will meet the approbation of the whole.

True Humanity.

An Irish girl living at service in a gentleman's family in Boston, sent three pounds to her mother, in the North of Ireland, by the steamer of the 1st of March. By the last steamer she received an answer, from which the Transcript makes the following extracts:—"Dear Daughter: I received your kind and affectionate letter with the enclosed sum of three pounds, which was a joyful sight for a starving mother and a heart broken sister. I well may call it heart broken, when she has been working every day, breaking stones on the public roads with hundreds of our fellow countrymen and women, without a shoe on their feet,which is the situation of your poor sister."

Greatest Water Fall in Europe.

In a mineralogical report of Lapland, presented to the Swedish Government, amongst other curious facts, the discovery of a great waterfall in the river Lulea is particularly mentioned. It is said to be one eighth of a mile broad, and at its greatest height to fall 4 hundred feet.

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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History of Architecture.

(Continued from No. 33.)

If, in an Arabian building, four columns are united, it is by a low, square wall at the bottom, between the columns. The Gothic churches are extremely light buildings: they have large windows, often with variegated panes. In the Arabian mosques, the ceiling is mostly low; their windows are of less height and often covered with carvings; so that the light is received less through them than thro' the cupola and the opened doors. The entrance of a Gothic church is a deep arch, diminishing towards the interior of the building, and adorned on the side walls with statues, columns, niches and other ornaments; but those of the mosques, and of other Arabian, and even Moorish buildings, are shallow, and made in the same manner as doors are at present. Besides, Swinburne observes, that among the different Arabian capitals which he saw, he found none resembling, in design and arrangement, those which we find in the Gothic churches of England and France. The Moorish architecture appears in all its splendor in the ancient palace of the Mohommedan monarchs at Grenada, which is called the Alhambra, or red house, and which resembles more a fairy palace than a work of human hands. The character of the Arabian architecture was lightness and splendor. Rich ornaments, and lightness in the single parts, render it agreeable to the eye. The modern Gothic architecture, which originated in the attempts of Byzantine artists to cover the coarseness and heaviness of the old Gothic by an appearance of lightness, excites the imagination by its richly adorned arches, its distant perspective, and its religious dimness, produced by its painted windows. It retained, from the old Gothic architecture, the high, bold arches, the firm and strong walls; but it disguised them under volutes, flowers, niches, little pierced towers, so that they appear to be light and weak. Afterwards the architects went still farther, and pierced the large, high towers, so that the stairs appear hanging in the air; they gave to the windows an extraordinary height, and adorned the building itself with statues. This style, in which many churches, convents and abbeys were erected, was formed in Spain, and thence extended over France, England and Germany.

The Germans were unacquainted with architecture until the time of Charlemagne.—He introduced from Italy the Byzantine style then common. Afterwards, the Arabian architecture had some influence upon that of the western nations; for the German art shows its characteristics in the pointed arches, and the buttresses, &c. This was united with the Byzantine style, to which, in general, they still adhered, and thus originated a mixed style, which maintained itself until the middle of the 13th century. Then began the modern Gothic or German style, which we may also call the *romantic*, since it was formed by the romantic spirit of the middle ages. Growing up in Germany, it obtained its perfection in the towers of the minster of Strasburg, in the cathedral of Cologne, in the church of St. Stephen in Vienna, the cathedral of Erfurt, the church of St. Sebaldus, in Nuremburg, the church of St Elizabeth in Marburg, &c., and extended itself from thence to France, England, Spain and Italy. The German architecture shows also the influence of climate and religion, particularly in the churches.—The slender columns, always united in groups, rise to a lofty height, resembling the giants of the grove, in whose dark shade the ancient Teuton used to build his altar. In the *chiara escure* of the dome, the soul, divested of earthly thoughts, must collect itself, and rise, like the dome, to its Maker.

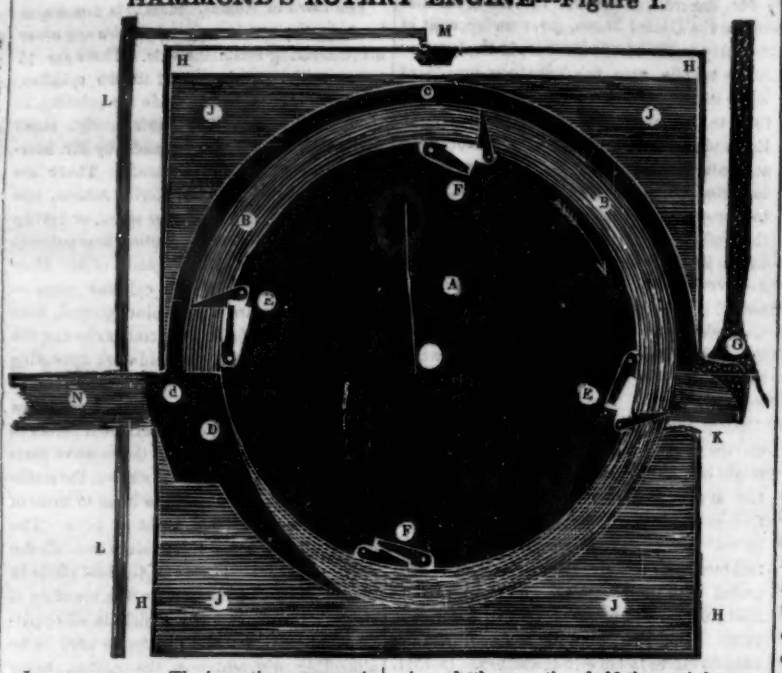
(To be Continued.)

A Remedy.

A woman in Michigan lately destroyed a quantity of hops, to prevent her husband selling them to a distiller. On which the Organ remarks: "If all the grain in the world which goes to distilleries were burned as soon as harvested, there would be much less starvation in the world.

Upwards of five hundred divisions of the Sons of Temperance has been chartered in the States of New York and Pennsylvania.

HAMMOND'S ROTARY ENGINE---Figure 1.

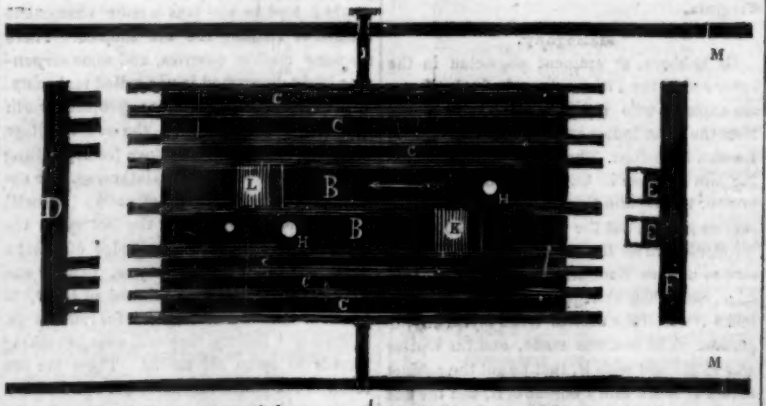


Introduction.—The inventing community appear determined to supersede the reciprocating steam engine, by the rotatory in some form; and in all the various plans which have been recently invented—only a small number of which, have been published however,—it may be remarked that each one has claims to some original and excellent points, though it may be doubtful whether any one has wholly escaped all the objectionable difficulties. We have examined a model of the one here imperfectly represented, and have no doubt that if nicely made it will answer for practical use; it certainly has some points of excellence. The engraving including the letters of reference and the following explanation were furnished by the inventor, wherefore we cannot take the responsibility of the elucidation of the principles, nor the illustration of the construction of the invention; but may simply remark that steam is admitted through certain orifices to the interior of the wheel and thence to two circular channels in the periphery thereof in such a manner that it thereby raises several small gate-valves which close these channels and prevent the escape of steam in any way except by the motion of the wheel.—The inventor is Mr. C. B. Hammond, of Brooklyn.

FIGURE 1.

Explanation.—A represents the side of a wheel, its projecting edge, which forms a series of grooves, being removed. B B, grooves in the periphery of the wheel. C, cap covering a little more than half the periphery.—D, groove head through which the steam *d*, passes. E E, gates in one steam groove to receive the pressure of the steam as they pass under the groove head. F F, gates situated intermediately in the other steam groove; the gates are forced up alternately by steam coming under them through an inner passage from the other groove. E, escape pipe. H H H H, a box which encloses the wheel and cap containing oil or thin tar, or any other liquid, J J J J. The liquid will prevent the great heat that a rotary engine would otherwise engender, consequently avoiding much of the expansion; it also serves to keep the bearings constantly oiled, and depresses the gates quickly though gently as soon as they leave the cap, preventing the sudden blow they would receive without it. Furthermore, it forms a perfect packing by entering the grooves C (as seen in fig. 2,) and forcing itself around the groove head D, a small quantity of it will secret itself under the gates and pass into the grooves B B, fig. 2, and will be forced around the edges of the gates by the steam so soon as the gates rise. Being thus provided with a packing, the cap, (a section of which is seen at D fig. 2,) need not set so close on the wheel as to bind or cause friction. The liquid escapes at K, and falls into a receiver below, from which it is again taken up by pump L L, and deposited into the box H H, through a funnel strainer M. N, the frame on which the wheel rests.

Figure 2.



Represents a bird's eye view of the same.—B B, steam grooves. C C C C C C, grooves to receive corresponding tongues of the cap. D, section of the cap. E, groove heads, with an opening to admit steam into the grooves B B. F, piece to which the groove heads are attached and on which one end of the cap rests. H H, holes through which the steam goes from one groove B, to throw up the gates of the other groove B, and vice versa. J, shaft with a cog wheel at one end. K and L, gates. A model of the above may be seen at this office.

An Ancient Amphitheatre.

It is stated, in a letter from Naples, that the ancient amphitheatre of Pouzzoles has been freed from the earth that surrounded it, and may now be examined in all its parts. The dens of the animals, which are situated under the arena, are of extremely solid masonry, and in a state of excellent preservation. Lamps, parts of columns, and remains of architectural ornaments have been found in them.

Oriental Servility.

The *Spectateur Egyptien*, of the 28th ult. states, that, two days before the festival of Dossa in commemoration of the anniversary of the birth of Mahomet, two hundred persons threw themselves under the feet of the horse rode by the Sheik, and which is a descendant of the prophets' famous Aboubeker, and suffered themselves to be trampled upon by the animal.

TO CORRESPONDENTS.

"S. B. E. of New York."—You may rest assured that no advantage can be obtained by the arrangement of machinery which you propose.

"L. G. of Conn."—We can obtain the intelligence you require by writing to Washington, which will cost $2. We shall attend to it.

"C. M. P. New Jersey."—The latest improvement in swings, and the only good article has been entered for a patent by a mechanic of this city, who is now building them. It is difficult to give you a description without an engraving, but we shall endeavor to procure an engraving next week, and procure permission for you to construct one for your own use.

"E. T. S. of Mass."—Your proposed pen making machine is apparently original, and may be secured by patent; but we are doubtful whether there is much encouragement for such a machine now that we procure tolerable steel pens for two cents per dozen. They are likely to be superseded by the gold ever-points.

"C. J. of Wisconsin."—The parallel double action wheel has been tested, and we have a small one on hand, but it is a difficult article to get up in the first instance. We shall endeavor to put them forward this summer if we can find a suitable agent to take charge of that department.

"M. A. H. of N. Y."—We doubt whether any perfectly effectual method has been found for preventing encrustations on the old fashioned steam boilers. But the new Stockbridge revolving boiler, and some other new kinds are perfectly secure against that difficulty.

"T. H. D. of New Hampshire."—Such an improvement as you propose, that would gradually stop a train of cars in the space of 100 feet, would be just what is wanted; but you probably do not consider all the difficulties to be encountered. If you depend on brakes, all the wheels would slide on the rails, especially when slightly glazed with ice. A central rack rail appears to be the only resort; but we would know your plan. The refraction question has been clear enough in our own mind for years, but we were willing to present the views of others.

"A. of Mass."—We cannot admit so dangerous a precedent as the answering in full of communications without giving the initials of the name of the correspondent. Perhaps you had better prove your inventions by actual operation and we shall be pleased to notice them.

"E. G. of Mass."—We have seen the Utica water wheel of which you speak, (but do not remember the name of the inventor) and think it an ingeniously contrived wheel, on a good principal; but the stories and statements about it, are extravagantly absurd, being altogether inconsistant with the laws of hydraulics. We have no knowledge of such a button machine as you mention We shall send the circular.

"J. D. B. of Mass."—The principal recent improvement in the Drummond light, consists in producing the gases by means of a heated platina tube, as described two or three weeks since. A better substance than lime for this nucleus, nowever, is *zircon*, a mineral chiefly composed of zirconia and silicia, found in the sand of the rivers of Ceylon, and occasionally found imbedded in primitive rock.

"H. G. of Pa."—There is no doubt that a portable planing machine on your plan would be very useful and convenient for carpenters: but the recently renewed Woodworth's patent embraces the most essential principles of your machines; of course you would not be permitted to use them.

"J. C. of Maryland."—The article of which you enquire is not in this market, but we can send you a description and drawing of our own press, for $3, with permission to use.

"A. D. W. of Maryland."—Yours with its contents is received. We shall write by mail.

"P. V. F. of Vermont."—Your plan for an adjustable waterwheel is clearly described and readily understood; there is no doubt it would operate according to your calculation; but in the present immense competition of waterwheels, and while there are so many kinds that will run quite as well ten feet below the surface of the water as at the top, we can see no utility in arranging a wheel adjustable to the surface; and with this view, could not advise you to apply for a patent.

"A. H. of Michigan."—Your invention for

working locomotives and trains, up inclined plains does much credit to your inventive genius and scientific abilities. We think it might succeed well; but regret to inform you that the same plan precisely has been exhibited for five years past, at the rooms of the American Institute in this city. We do not know the inventors (patentees') address, but could ascertain if required. The only objection we have heard, is a slight difficulty in passing the point from the plain rail to the rack rail. But the reason it has not come into use, is because it has never been put forward with energy. No Railroad Company will adopt anything of the kind till it has been proved; like the paddy sailor who declined going aloft till he got used to it, no man will meddle with a new invention till it gets into general use.

"G. T. of Michigan."—We have a favorable opinion of your apparatus for drying corn and meal; it must be preferred in many respects, to any other plan. Steam is preferable for heating the tubes, but there should be a current of *dry* warm air passing through the pipes to carry off the aqueous vapor. The cost of the drawing specification, &c., would be $25. The patent office fee is $30 for a patent, $20 for caveat. The cost of an operating model constructed here would be probably $25. There can be no expense saved by having several setts prepared together. We shall give a notice next week.

"C. D. W. of Conn."—We do indeed owe you an apology which must consist in the circumstances of excessive press of indispensible business, and disappointment of certain anticipated assistance. Your work will be finished before you receive this. Many thanks for your patience.

"J. G. S. of N. Y."—Glad you are so well employed.

"M. T. E. of N. Y."—Your invention appears truly scientific, and it might be to your advantage to have an engraving procured, which will cost but three dollars. The principal objection to a float within the main boiler is, that during violent ebulition of the water, it will elevate the buoy above the proper level; but this may be remedied by placing the float in a separate chamber, connected with the boiler.

"E. G. of Mass."—We like the drawing of your mill very well, and shall procure an engraving soon as convenient. The expense of procuring a patent will be $25, besides the patent fee of $30, and a model which would cost here, nearly $15 more. Your waterwheel is very similar to one patented by a Mr. Parker about three years since, and on account of which two or more others have been since rejected. However, yours has some peculiar points, which if closely defined, might sustain a patent. We can procure a copy of Mr. Parker's specification for you for three dollars if you require it.

"W. S. T. of N. Y."—Your Patent Office papers are in progress, and will soon be ready. The detention at the Patent Office probably about three months—perhaps less.

"O. P. of Mass."—We know of no machine constructed on the plan you describe; but in order to judge of its novelty and utility we should require a more definite description of its construction and operation. If it will save labor it will be valuable.

"A. T. W. of Missouri."—In our opinion the wind wheel concerning which you enquire, is the best kind in use, in proportion to its expense,—it being the cheapest, and convenient of connection. To your question about the power, we answer 'yes.' The furnaces alluded to, are adopted to wood as well as coal, and are not difficult of construction; but we cannot inform you about the terms. The best smut machines are sold for $25. The new kind described, has not been introduced here. A tolerable good machine, small and portable may be furnished for ten dollars, if several are wanted.

"W. H. B. of Delaware."—The article mentioned can be had at the price named, at the Brooklyn Manufactories unless the price has been recently advanced. We will enquire.

"L. P. H. of Kentucky."—All specifications of patents are recorded in the Patent Office, and subject to the perusal of all who so require. We cannot inform you as to what compositions are already patented, without employing some person to examine the records. Platina foil is sold by weight, at $11 per ounce;—per square inch 25 cents, of proper thickness for battery plates.

"W. J. M. of South Carolina."—You may have the patent right of the "Parallel Rotary" for the territory specified, for $100. Most of your questions may be answered affirmatively; but as we make no arrangements of agencies, it may not be important to answer each.

"O. B. of N. Y."—All right. We shall endeavor to do justice to the subject, and in a manner, we doubt not, that will be satisfacto- to you.

"J. A. of Pennsylvania."—We should suppose that the paddles of your wheel would change their position unfavorably while entering the water. If they do not, it will work well, and there is no doubt of its originality. We can furnish an engraving if you require it, for $2.

"J. E. W,"—"C. L. M" and others will receive attention next week.

To "A. D. W." and others we shall write by mail.

Cuts and Engravings.

We wish to have it distinctly understood that all the engravings of new inventions furnished at the expense of the inventors thereof, are the property of said inventors respectively, and subject to their orders.

Gun Cotton for Blasting.

Gun Cotton is now pretty generally used in the Pennsylvania coal region for mining purposes, but it requires greater care than has hitherto been practiced with powder, as it is more liable to ignite by friction. It requires to be used with great caution.

FIRST VOLUME.

We would inform those who have been disappointed in procuring the whole of the first volume of the Scientific American, that we have recently come into possession of a few complete sets of the last half, (i. e. from Nos. 26 to 52 inclusive) which we will dispose of at the subscription price, viz. $1 per set.

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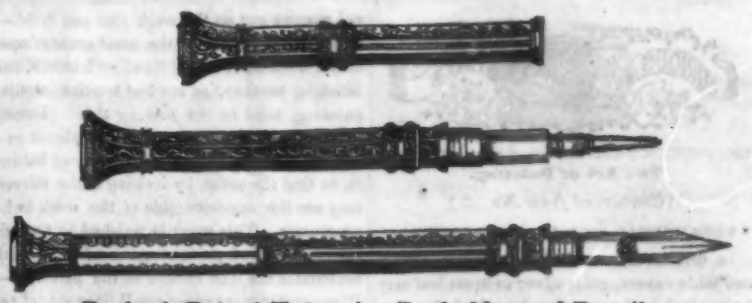
☞ We would inform those who deal or have occasion to use DOOR LOCKS or LATCHES in the construction of buildings, that we have just received a large lot of Mortice Locks and Latches, which we can furnish at a less price than the original cost to manufacture them. They are of a beautiful pattern and some of the Locks of an entirely new style. They may be had in any quantity, by application at this office. MUNN & CO. 128 Fulton st.



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A. G. BAGLEY, No. 189 Broadway, New York, Sept. 1, 1846. s24 tf

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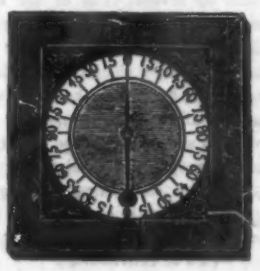

THE UTILITY of this invention so far exceeds the expectation of the inventor that he has been induced to engage in the manufacture of them to a large extent. It is understood from the engraving, that the proper position of the instrument is vertical, and that the weight of the ball will keep the index in a perpendicular position, so that either the bottom or side of the frame being placed against a horizontal, vertical or oblique surface, the index will show its inclination, (if there be any) in degrees.

Besides its utility, the Indicator possesses a share of elegance, consisting of a neat mahogany frame 9 inches square and glass, encasing a lithographic dial with an appropriate picture in the centre, and the movement is so free that a variation of one fourth of a degree is indicated. They may be sent to any part of the U. S. by Express.

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THOMAS PROSSER, Patentee,
d26 28 Platt street, New York.

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THOMAS DADE.

State of New York, City of New York, ss.—On the 16th day of February, A. D. 1847, appeared before me Doctor S. B. Smith, who being by me duly sworn, did depose and say that the following certificates and extracts from letters are each and every one of them true as received from the several persons whose names are thereunto attached, and that the same are a portion of the many testimonies of the cures by his Magnetic Machine.

Affirmed before me, this 16th day of Feb. 1847.

DAVID S. JACKSON,
Acting Mayor of the City of New York.

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Case of Scrofula and Palpitation of the Heart: Two of Dr. Smith's own children, the scars still to be seen.

Cured of Spinal Complaint and Weak Eyes; Cases attested to by H. Peck, New London, Huron County, Ohio.

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Superintendant of Portsmouth, N. H.

d12 6m* Steam Mills.

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ZENAS C. ROBBINS,

Mechanical Engineer and Agent for procuring Patents.

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Office on F street opposite Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Com. of Patents; Hon. H. L. Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

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Engraving on Wood

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The Art of Painting.

(*Continued from No.* 33.)

ORNAMENTAL GILDING AND BRONZING.

In ornamental work for carriages, chairs and table covers, gold, silver or brass leaf may be applied in the manner described for sign painting; but in this work dilute copal varnish may be used for sizing and will dry sufficiently in a few minutes. In ornamental work the leaf sometimes requires to be shaded in parts, which is done by brushing over it a thin transparent coat of finely ground umber or burnt *terra de sienna*. A more perfect gold shade, however, is composed of umber and gumboge with a slight tinge of rose-pink. Silver ornaments may be tinged with various colors without losing their metallic lustre. For this purpose, several transparent colors, termed laquers, are used. A gold laquer is made by steeping two parts of turmeric with one part of red saunders in a quantity of shellac varnish —a solution of gum shellac in alcohol. A blue laquer is made by grinding Prussian blue in shellac varnish, working it dilute. For rose color, drop-lake is used in the same manner; and for the best transparent green, crystals of verdigris are used. By the use of these on silver leaf, various colors may be produced with metallic brilliancy: but in all cases, this work must be secured by a coat of copal varnish. Another mode of producing metallic ornaments, is by means of metallic powder, termed *bronze*. These bronzes, gold, silver, brass or copper, may be readily procured, of various shades and colors, and, gold excepted, at trifling expense. Bronzed figures and ornaments are produced by means of theorums or stencils, consisting of pieces of stiff paper, through which apertures are cut, in the form of the figures intended; and these stencils being placed on the ground intended to receive the figures, the bronze is applied by means of a little ball or roll of buff leather, termed a puff,—which being dipped in the bronze, is lightly pressed on, or moved over the ground, which appears through the aperture. For example: size the whole ground with a coat of dilute copal varnish, and when it is nearly dry, cut out the form of an oak leaf, from a piece of paper, and place the perforated paper on the sized ground; dip the puff in the bronze, and apply it to the figure, moving the puff from the edges, toward the centre of the figure, applying the bronze principally to the edges; and when the stencil is removed, the bronzed figure will remain conspicuous. Another stencil may be made with the figure of the centre and branches of the same leaf, and being placed on the same place, and the bronze being applied, the new figure will appear distinctly upon the first, and render it more perfect. In this way, by a variety of stencils to match, and diverse colored bronzes, a variety of beautifully brilliant flowers, landscapes, edifices, &c. may be produced, with but little expense of labor. These figures may be occasionally tinged with laquers, or improved by outlines of opaque paints, and should be secured by a coat of varnish.

PAINTING ON GLASS.

In ordinary ornamental painting on glass, the same colors are used as in oil painting, and are sometimes ground in oil; but for the greater expedition of the work, they should be ground in drying japan, diluted with spirits of turpentine; or in shellac varnish diluted with alcohol. The shelac varnish dries almost instantly, which is often objectionable, as it does not allow sufficient time for the blending of different colors, which is indispensable in landscape or portrait painting. The outlines of the design are generally drawn on glass, with either a pen or a fine hair pencil, dipped in dilute Brunswick Blacking. (This compound is made by melting gum asphaltum over a fire of coals, and diluting it with spirits of turpentine, cautiously adding a few drops at a time, away from the fire, and briskly stirring the mixture, till sufficiently diluted for use.) If a lead pencil drawing is required, the glass must first have a thin coat of very dilute copal varnish put on the work side and dried.—In applying the colors, the usual order of operation must be reversed: and such colors, and finishing touches, as are last applied in other painting, must be the first in this. During the process, the glass should be placed in a vertical position, and a mirror placed behind it, so that the artist, by looking in the mirror, may see the opposite side of the work as he progresses. This work is finished by spreading a full coat of paint over the whole, which constitutes the true ground of the painting.—If any outlines, or other small lines are yet required in the painting, they may be produced by scratching through the paint with the point of a needle, and then painting over these lines with a full coat of the required color, which will appear in the lines only.

TRANSFERRING A PRINT TO GLASS.

When a lithographic or other print is required to appear on glass, the glass is first coated with dilute copal varnish, and the paper containing the print is dipped in warm water; and while the varnish remains adhesive or sticky, the paper is placed on the varnish, with the print side down, ond then gently pressed till all the parts adhere to the varnish: or several folds of soft paper may be placed on the print, and a piece of plank or other weight placed thereon to keep the print and varnish in contact till both are dry. Then the print, being again moistened with water, may be peeled or rubbed off, leaving the ink of the print adhering to the glass. The several parts of the print may then be painted with appropriate colors, on the glass, and finished with a ground coat over all, as before mentioned.

TRANSPARENT PAINTING ON GLASS.

Place the glass between the eye and a window, or some light object, and having drawn the outlines with Brunswick blacking, proceed to color the several parts of the design with the transparent colors or laquers, as before described, adding one, two or three coats where the deeper shades are required.—For this purpose, however, the colors should be prepared in dilute copal varnish; or a coat of this varnish should be spread over the colored work, if prepared in shellac.

The process of enamelling, gilding, and bronzing on glass, will be described in our next number.

(*To be continued.*)

To Give Wood a Gold, Silver or Copper Lustre.

Grind about two ounces of white beach sand in a gill of water, in which half an ounce of gum Arabic has been dissolved, and brush over the work with it. When this is dry, the work may be rubbed over with a piece of gold, silver or copper, and will in a measure assume their respective colors and brilliancy. The work may be polished by a flint burnisher, but should not be varnished.

Pillar Roses.

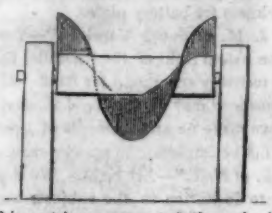
A correspondent practices the following mode of having pillar roses. Two-inch augur holes are bored through pieces of scantling three by four inches, and twelve feet long, one foot apart. They are then set in the ground as posts, three feet deep. Near them tall growing roses are planted, two of different colors, one on each side of the post; and as they grow, the stems are run through the holes. In this way they will rise nine feet high,—no winds can blow the stems off and no tying is necessary. Branches intertwined, bearing roses of contrasted colors, make a fine appearance. The Boursalts, Hybrid China, and some of the prairie rose, furnish fine roses for these blooming pillars.

A Beautiful Flower.

A singular phenomenon, says a French paper, has shown itself in the green house of Lyons. At the time when all the growers of camelias, roses, dahlias, &c., are puzzling themselves to get the blue color, the only shade which nature has refused to these kinds of of plants, chance has thrown a shade of azure blue upon the petals of flowers produced by one single branch of a camelia root of the species *imbricata rubra*. This plant belongs to M. Dagene. The interior petals of the flowers are of a delicate red, the superior are white, and both are united with blue. The flower thus unites three additional colors.

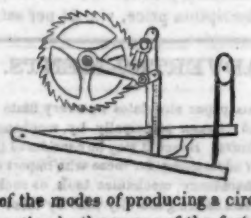
MECHANICAL MOVEMENTS.

The Spiral Float or Fan.



In this cut is represented the principle of what is called the *screw propeller*, consisting of a straight shaft or axle, around which is coiled helically a strip of metallic plate, one edge of which is attached to the shaft while the other is extended outward, like the thread of a screw. One or more of these spiral leaves may be employed, and when the shaft is put in motion rotarily, whether in water or in atmospheric air only, the tendency is to propel the shaft endwise in one direction by the reaction of the fluid which is driven in the opposite direction by the progressive motion of the spiral leaves. Various modifications of this principle have been applied to the propulsion of vessels, and with tolerable success, though it is readily demonstrable that at least one third of the power applied is lost by the obliquity of the application of the surface of the fluid. On account of the convenience of its management it is proposed for the propulsion of aerial vessels or eliptical balloons. Its propulsive tendency in the atmosphere is easily illustrated by coiling a common watch-spring upon the shaft of a light spiral model, mounted within a longitudinal aperture cut in the centre of a sheet of thin card-paper. The outward end of the spring being attached to the paper, the force of the spring will readily carry the machine with itself, upward to a great height, or in any other direction at the option of the manager.

Foot Power.



One of the modes of producing a circular or rotary motion by the power of the feet on treadles, is here represented. The ratchet wheel is supposed to be mounted on a horizontal shaft or axle, and on each side of the wheel, and playing on the same axle, is a short lever, extending a little beyond the ratchet periphery, and supporting a pall, one end of which takes to the ratchet, while the opposite end is connected by a vertical rod to a horizontal treadle below. The two treadles are connected by a cord which passes over a pulley, so that when one is depressed, the other is elevated; and by the reciprocal motion of the treadles and palls, a powerful and nearly continuous motion is produced in the axle, which may be employed in raising heavy articles or other purposes.

An Unexplored Torrent.

We halted at noon, at the upper end of a large bottom, near some old houses, which had been a trading post, in latitude 41 deg. 46 44 min. At this place the elevation of the river above the sea is 6230 feet. That on Lewis's fork of the Columbia, at Forkhall, is according to our subsequent observation, 4500 feet. The descent of each stream is rapid, but that of the Colorado is but little known, and that little derived from vague report. Three hundred miles of its lower part as it approaches the gulf of California, is reported to be smooth and tranquil; but its upper part, is manifestly broken into many falls and rapids. From many descriptions of trappers it is probable that in its foaming course among its lofty precipices it presents many scenes of wild grandeur; and, though offering many temptations, and often discussed, no trappers have been bold enough to undertake a voyage which had so certain a prospect of a fatal termination. The Indians have strange stories of beautiful valleys, abounding with beavers, shut up among inaccessible walls of rock in the lower course of the river, and to which the neighboring Indians, in their occasional wars with the Spaniards and among themselves, drive their herds of cattle and flocks of sheep, leaving them to pasture in perfect security.—*Fremont.*

New Application of Ether.

The Boston papers contain accounts of the hiving of a swarm of bees, after the abstraction of their whole supply of honey, by throwing the little workers into a sound oblivion of what was going on around them, for half an hour or so. This was done at Cambridge, near Boston, the Letheon being applied by injection into the hive by a skillful hand.

Good Rail way Regulation.

The Great Western Railway has made a very good regulation in respect to passengers' luggage. In addition to the usual label a ticket with the initial of the owner's surname is attached to each article, and the luggage is sorted alphabetically, se that Mr. Brown, for instance, has only to go to a bin in the station marked B, and find his luggage at once.

The Ganges, which gathers the water of the Himalaya Mountains, has a declivity of only three inches per mile. This gives a velocity of three miles per hour, and requires more than a month to reach the sea from its source.

Several specimens of Chinese painting upon glass, of which the coloring, especially that of the faces, is rich and delicate, have lately arrived at Glasgow.

A movement is in progress in Philadelphia for establishing a school for the extremely poor children, on a principle similar to the "ragged schools" in English cities.

THE NEW YORK

SCIENTIFIC AMERICAN:

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BY MUNN & COMPANY.

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